

New York State Winter Weather Awareness Week October 21st to October 27th, 2012

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Warning Coordination Meteorologist

NOAA's National Weather Service

Binghamton NY



Why do we need to be prepared for the upcoming winter?

- New York State is known for its cold, snowy and icy winters, especially in upstate NY. However, every part of the state is vulnerable to big snow and ice storms and bitter cold.
- Winter weather can be dangerous if you are not prepared.

Annual Fatalities

- Annually 50 people are directly killed nationwide from winter storms and cold.
- Thousands more are killed in winter-related motor vehicle accidents. Many more are injured.
- Approximately 30 percent of fatalities due to winter storms come from automobile accidents. Many more are injuries from automobile accidents.
- Approximately 60 percent of fatalities occur when people get caught out in a storm.

Winter Hazards

- Heavy Snow
- Ice
- Cold Outbreaks
- Flooding

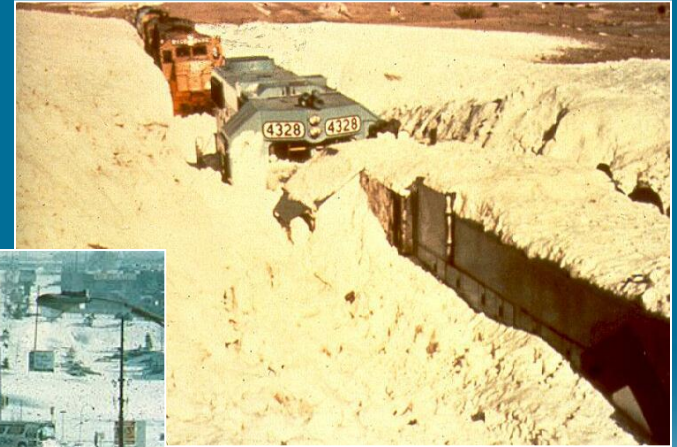
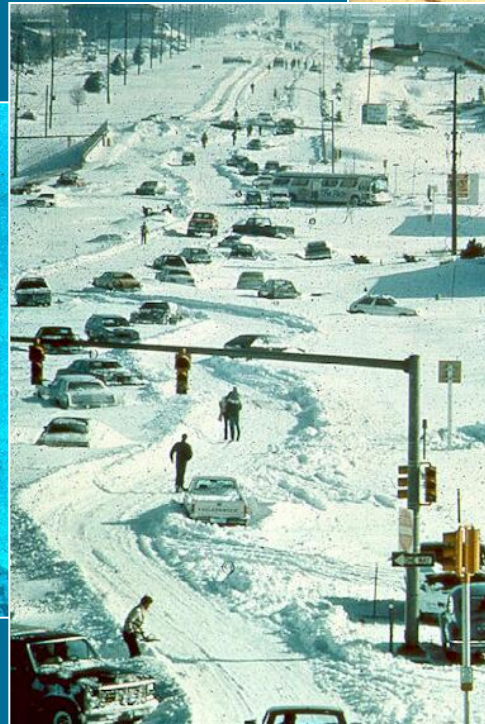


Snowstorm Definitions

- **Heavy Snow:** 7 inches or more/12 hours.
- **Blizzard:** the most severe winter storm. Wind or wind gusts exceeding 35 mph for 3 hours or more combined with blowing and/or falling snow. Visibilities near zero. Widespread whiteout conditions.
- Blizzards are a serious life-threatening weather hazard!!!!
- **Snow Squall:** intense periods of snow with near blizzard or blizzard conditions at times.
- **Snow Shower:** intermittent accumulating snow
- **Snow Flurries:** very light snow with little or no accumulation.

Heavy Snow Impacts

- Disrupts Transportation



Heavy Snow Impacts

- Traffic Accidents
 - *Driving too fast for conditions.*
 - *Suddenly driving into white-out conditions*
 - Poor visibility.
 - Hitting a snow drift at high speeds.
 - Hitting snowy or icy patches at high speeds.

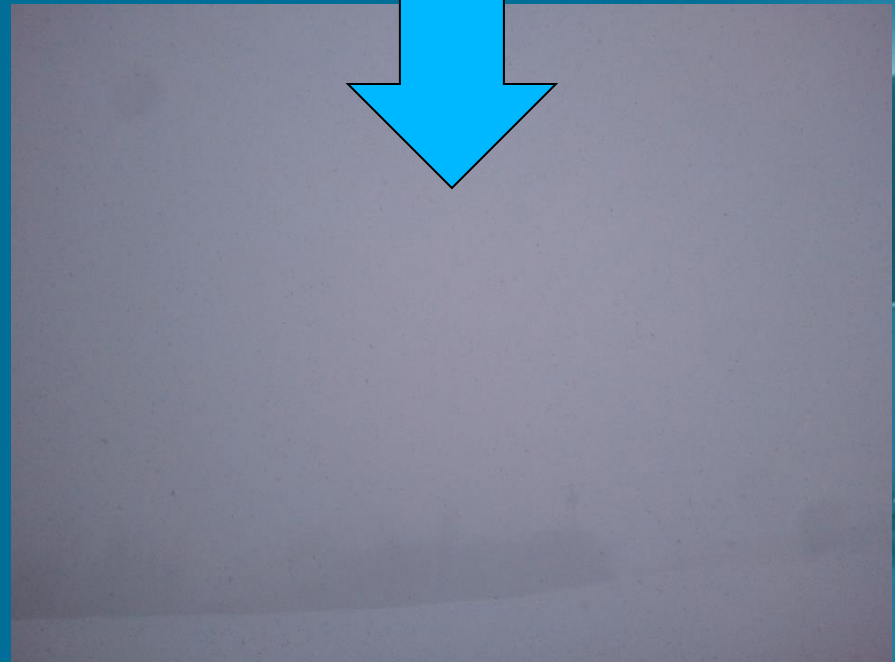
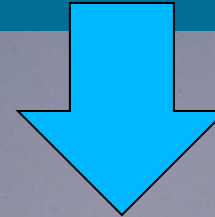


Beltway - 1996

Dangerous Snow Squalls



- Often occur along an arctic frontal boundaries. Generally only minor snow accumulations
- But near zero visibility in heavy snow, and dangerous road conditions occur quickly.



Heavy Snow Impacts

- Closes Schools and Businesses



Heavy Snow Impacts

- **Cost of Plowing and Snow Removal**



Heavy Snow Impacts

- Weight of heavy snow can cause roof collapse
- Break tree limbs and utility lines

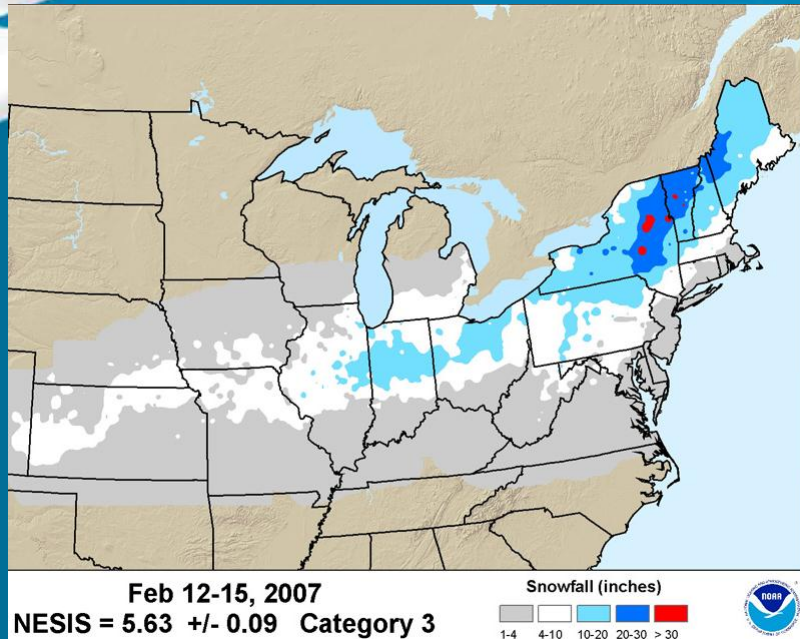


Blizzards

- The March 12-14 1993 Blizzard affected over 100 million people.
- Up to three feet of snow from Alabama to New York impacted 26 states.
- Crippled economic activities of one-third of the U.S., economic losses exceeding \$2 billion, property losses at \$4 billion.
- All East Coast airports closed, 25% of nation's flights cancelled.
- Millions without power.
- 250 fatalities.

NOAA Satellite Image

Valentine's Day Snowstorm – 2007

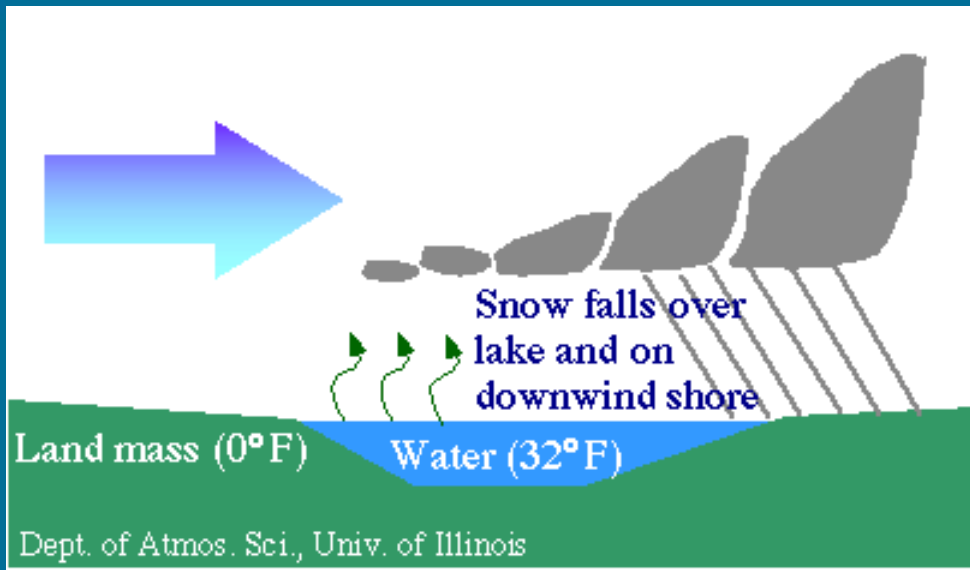


- Over 30 in. of snow across the Catskills
- Highest = 39 inches in Roseboom (Otsego County)
- Most locations around central NY averaged between 15-30 inches
- Snow began Tuesday evening (2/13) and continued through the early morning hours on the 15th

- Most intense portion of the storm occurred during the early morning on the 14th, with heavy snow and near blizzard conditions.
- Roof collapses occurred



Lake Effect Snow: Common in Upstate New York



- Warm water heats air above
- Warm air is unstable and rises
- Snow bands form
- Mountains add additional lift



Record Lake Effect Snows February 3-12, 2007

- Incredibly Mild December 2006 and Early January 2007
- Cold arctic air returns for late January and February 2007
 - *10+ feet of snow fell in the lake effect snow belts of northern NY!*



Ice Storms in New York

- Heavy weight of ice brings down trees



January 1998

Ice Storms: Definitions

- **Freezing rain:** rain that freezes on contact with all exposed surfaces. Objects become encased in ice, can damage trees and power lines.
- **Sleet:** Frozen raindrops that bounce on impact with the ground. Does NOT glaze over or encase objects with ice.

Freezing Rain

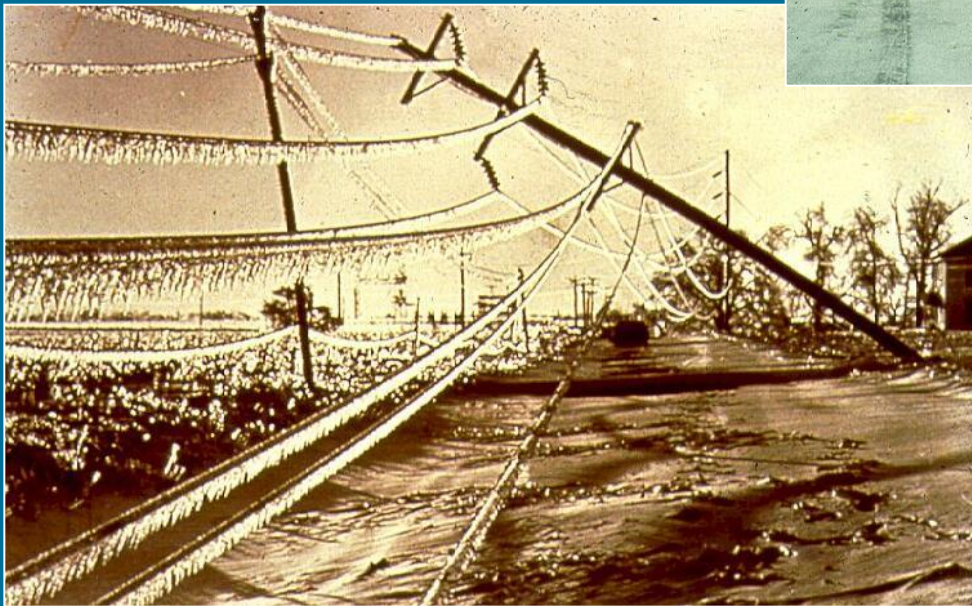


Sleet

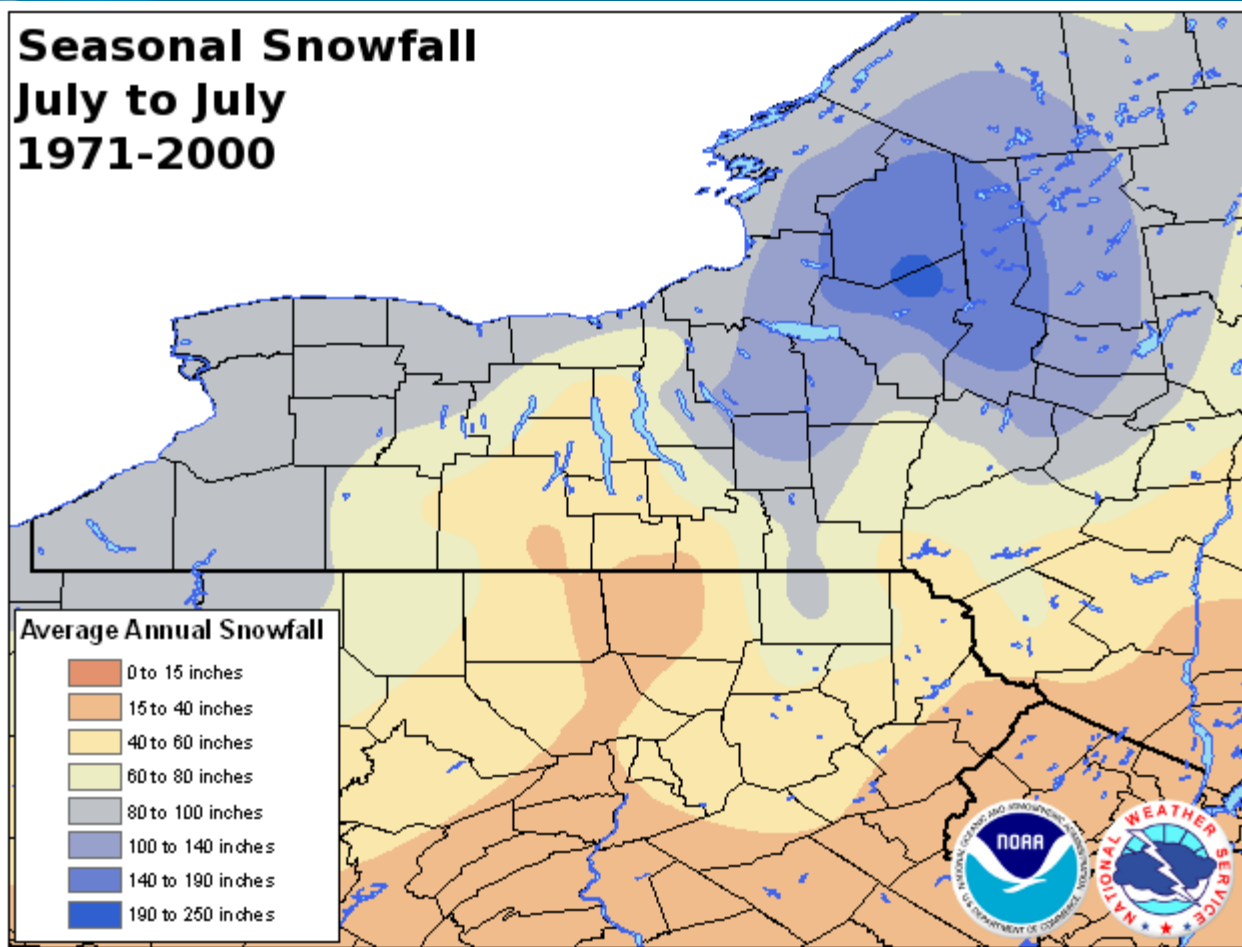


Ice Impacts

- Power and Communication lines come down
- Traffic accidents
- Pedestrian falls

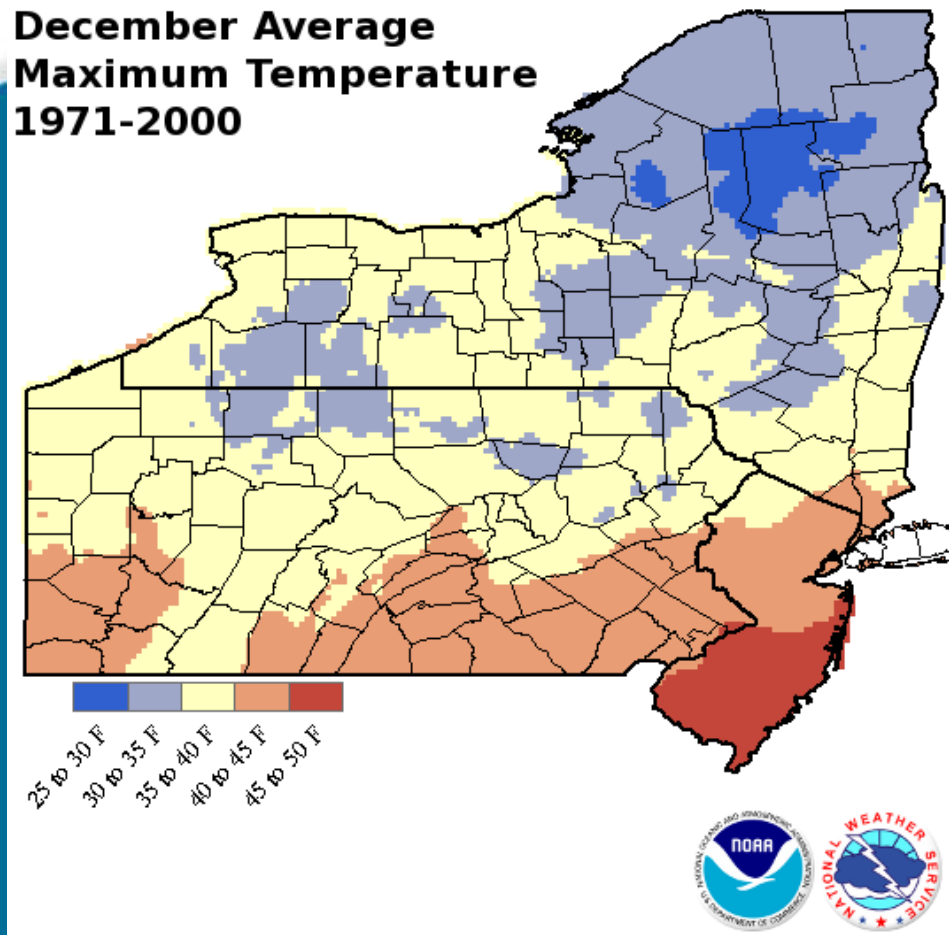


Normal Seasonal Snowfall

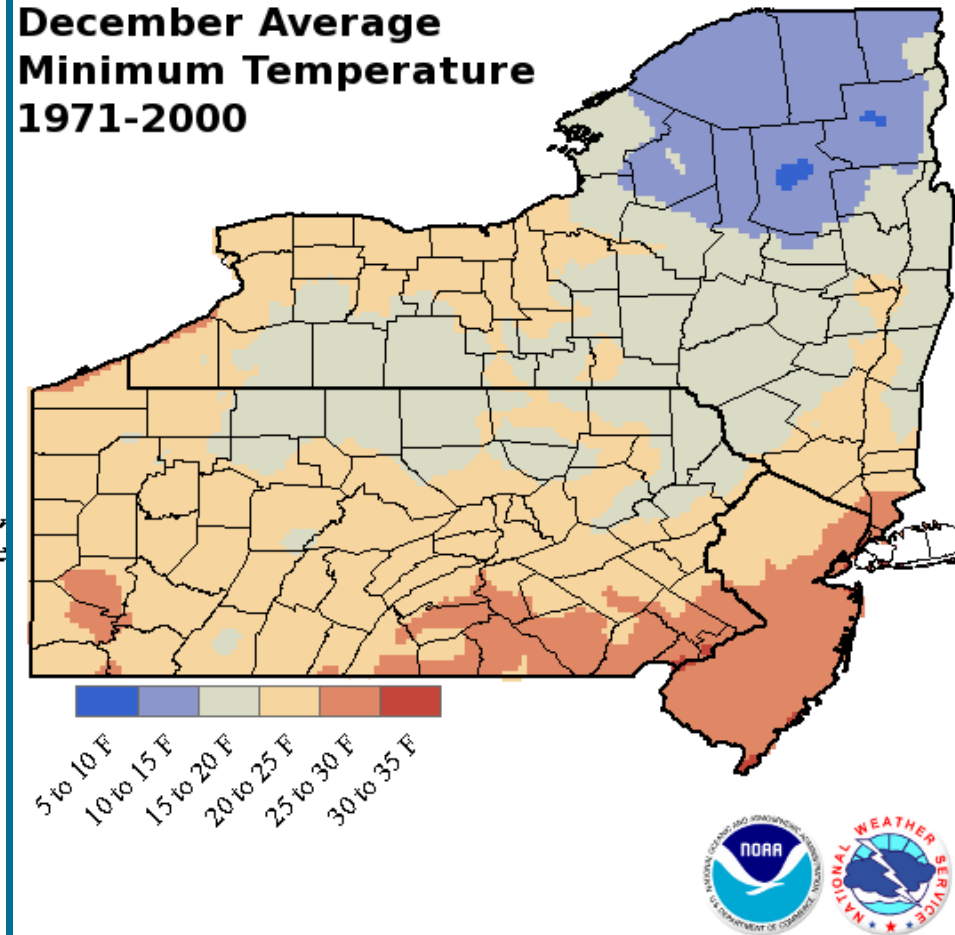


Normal High and Low Temperatures for December

**December Average
Maximum Temperature
1971-2000**

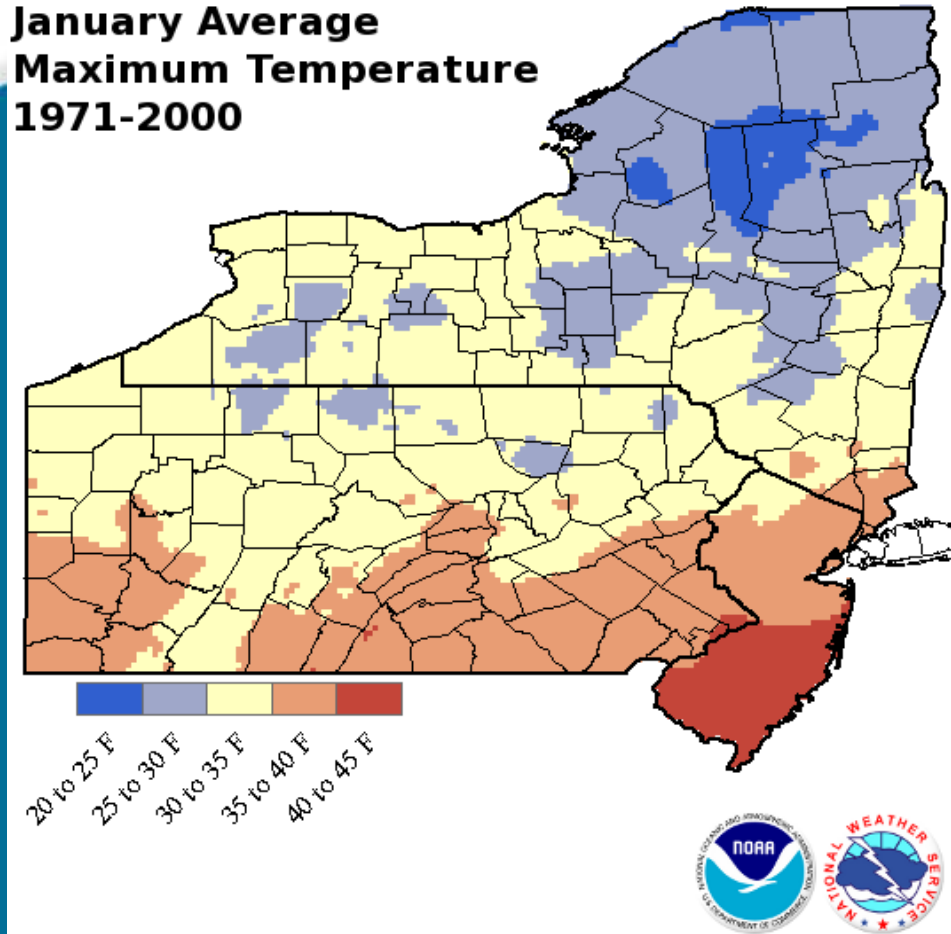


**December Average
Minimum Temperature
1971-2000**

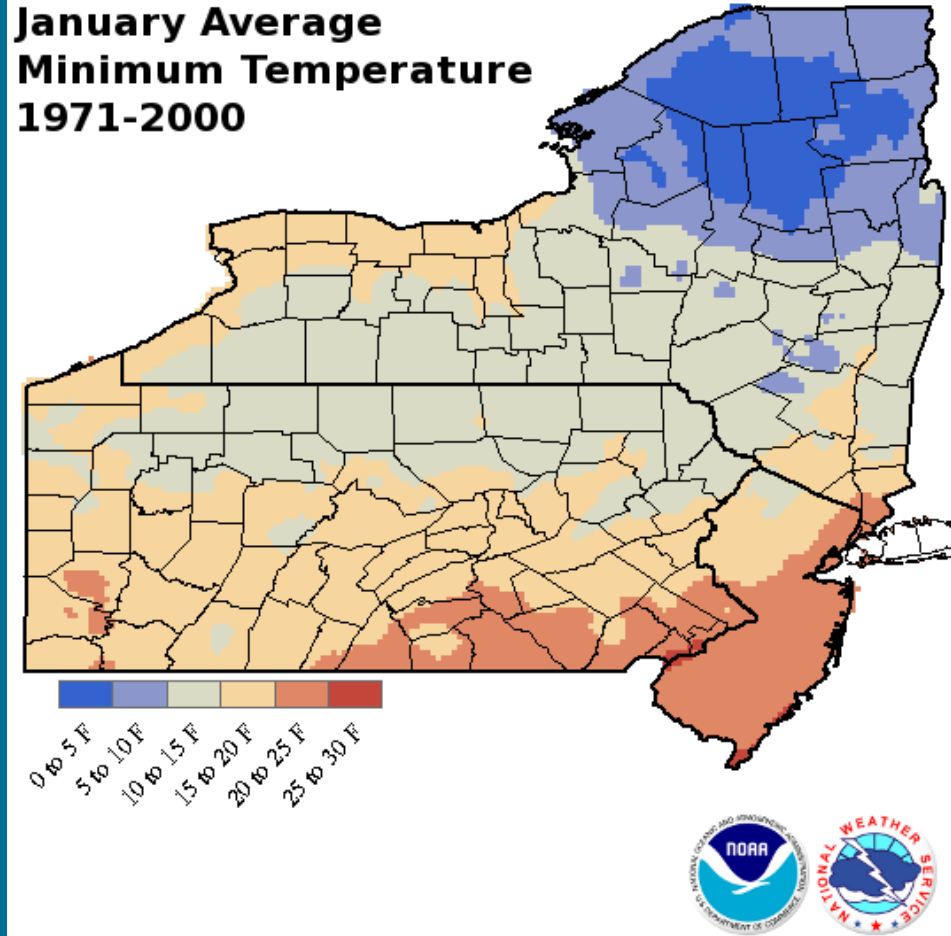


Normal High and Low Temperatures for January

**January Average
Maximum Temperature
1971-2000**

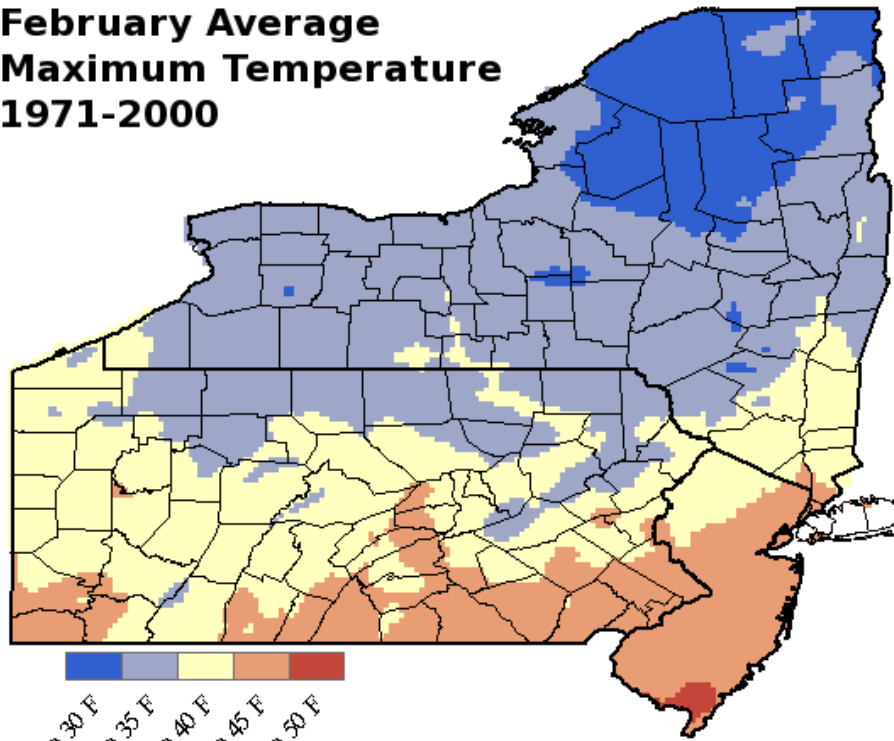


**January Average
Minimum Temperature
1971-2000**

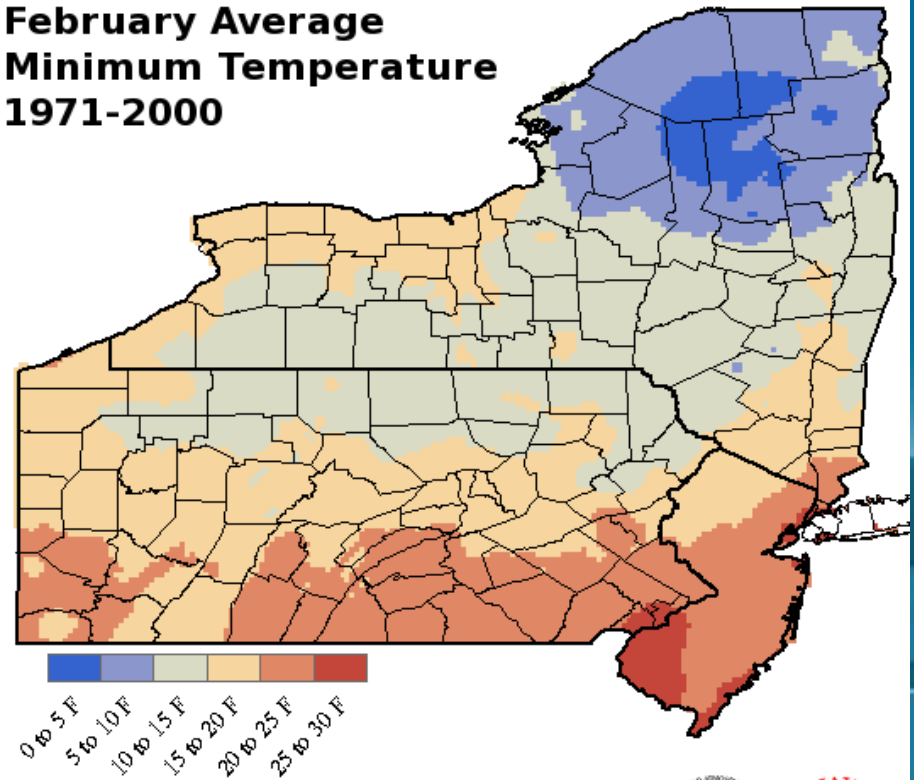


Normal High and Low Temperatures for February

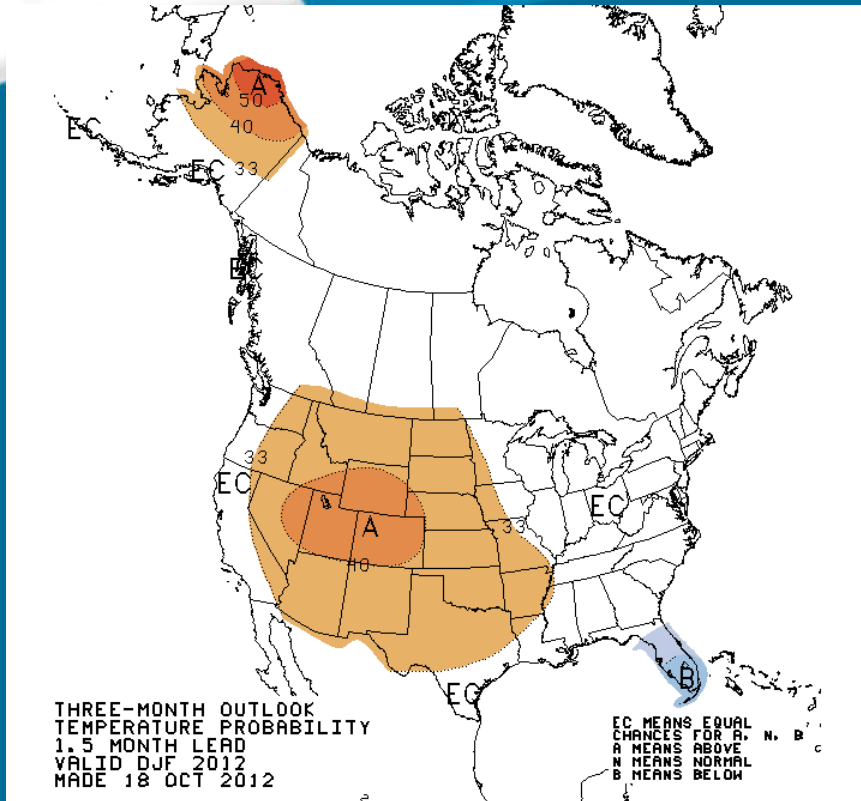
**February Average
Maximum Temperature
1971-2000**



**February Average
Minimum Temperature
1971-2000**

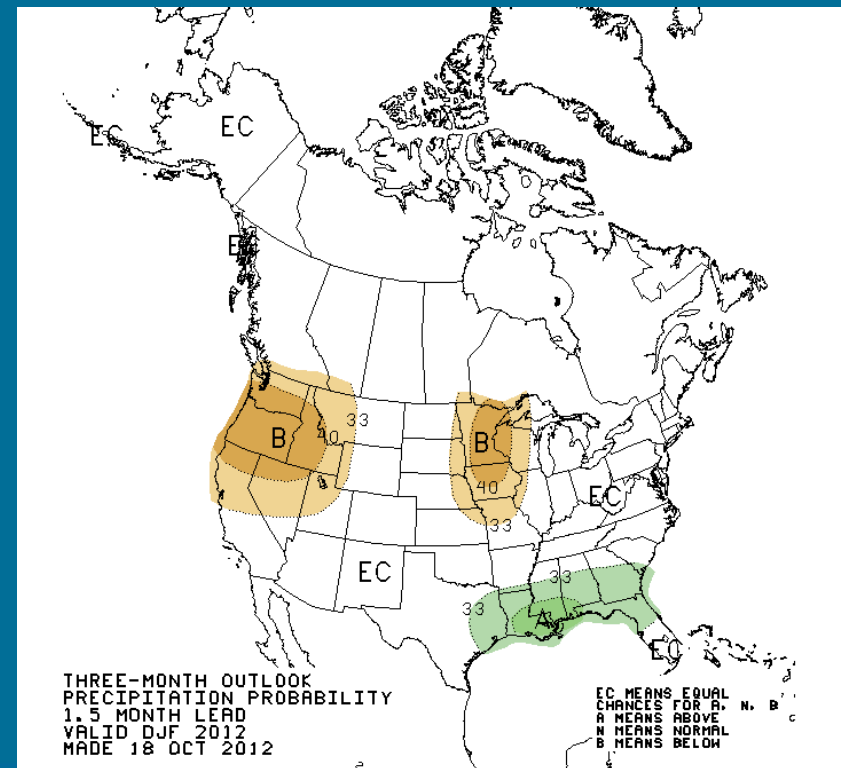


Temperature and Precipitation Winter Outlook



TEMPERATURES

PRECIPITATION



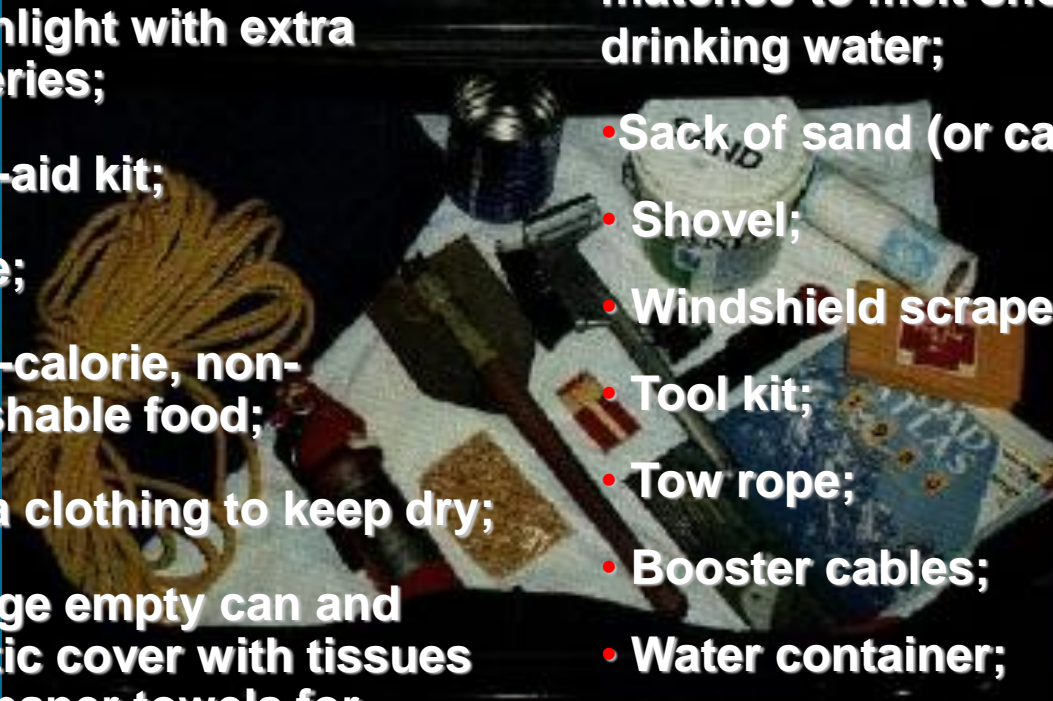
Winter Weather Safety- At Home



- *Flashlight and extra batteries.*
- *Battery-powered NOAA Weather Radio and portable radio to receive emergency information.*
- *Extra food and water – at least a 3 day supply.*
- *Extra medicine and baby items.*
- *First-aid supplies.*
- *Heating fuel.*
- *Emergency heating source, such as a fireplace, wood stove, space heater, etc.*
- *Fire extinguisher and smoke detector.*

Winter Storm Survival Kit- Automobiles

- Blankets/sleeping bags;
- Flashlight with extra batteries;
- First-aid kit;
- Knife;
- High-calorie, non-perishable food;
- Extra clothing to keep dry;
- A large empty can and plastic cover with tissues and paper towels for sanitary purposes;
- A smaller can and water-proof matches to melt snow for drinking water;
- Sack of sand (or cat litter);
- Shovel;
- Windshield scraper and brush;
- Tool kit;
- Tow rope;
- Booster cables;
- Water container;
- Compass and road maps.



Automobile Safety in Winter Storms

- Plan your travel and check the latest weather reports to avoid the storm!
- Fully check and winterize your vehicle before the winter season begins.
- Keep your gas tank near full to avoid ice in the tank and fuel lines.
- Try not to travel alone.
- Let someone know your timetable and primary and alternate routes.



Winter Watches

- **Winter Storm Watch:** Potential (50% chance or more) for a winter storm. A winter storm watch is used to cover all of the potential hazards from snow to ice to wind and extreme cold.
 - Potential exists for 7 inches of snow or more in 12 hours or less.
 - Potential exists for ½ inch or more of ice.
- **Blizzard Watch:** Potential exists for blizzard conditions.
- **Lake Effect Snow Watch:** 7 inches or more of lake effect snow possible.
- **Wind Chill Watch:** Potential exists for winds chills of 25°F or greater, with winds of ≥ 5 mph, lasting longer than one hour



Winter Warnings

- **Winter Storm Warning**
 - 7 inches of snow or more in 12 hours or 9 inches of snow or more in 24 hours.
 - Dangerous combination of snow, ice, low wind chill, and/or blowing/drifting snow.
- **Lake Effect Snow Warning**
 - 7 inches or more of lake effect snow in 12 hours
 - Localized accumulations; not all areas will see heavy lake effect snow.
- **Ice Storm Warning**
 - 1/2 inch or more of ice.
- **Blizzard Warning**
 - Blizzard conditions expected: Wind or wind gusts exceeding 35 mph for 3 hours or more combined with blowing and/or falling snow. Visibilities near zero. Widespread whiteout conditions.
- **Wind Chill Warning**
 - Wind Chills of -25F or less



Winter Advisories

- **Winter Weather Advisory:**
 - *Hazardous combination of snow, ice, low wind chill, and/or blowing/drifting snow.*
- **Freezing Rain Advisory**
 - *Any accumulation of ice*
- **Lake Effect Snow Advisory**
 - *4 to 6 inches of lake effect snow*
- **Wind Chill Advisory:**
 - *Wind chills of -15°F to -24°F*



Advisories vs. Warnings

- Advisories are issued for significant winter weather events that could be life-threatening if proper precautions are not taken.
- Warnings are issued when the event can be life-threatening even with precautions.

Wind Chill



NWS Windchill Chart



		Temperature (°F)																		
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97	
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98	

Frostbite Times

30 minutes

10 minutes

5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

<http://www.nws.noaa.gov/om/windchill/index.shtml>

Keeping Informed This Winter



Hazardous Weather Outlook

1 to 7 Day Outlook.

Text Product.

Issued daily at 5 am,
4 pm and updated as
needed.

ZCZC ALBHWOBGM
FLUS41 KBGM 110103
HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE BINGHAMTON NY
803 PM EST SAT FEB 10 2007

NYZ023>025-044>046-055>057-062-PAZ038>040-043-044-047-048-072-120115-
SCHUYLER-CHEMUNG-TOMPKINS-CORTLAND-CHENANGO-OTSEGO-TIOGA-BROOME-
DELAWARE-SULLIVAN-BRADFORD-SUSQUEHANNA-NORTHERN WAYNE-WYOMING-
LACKAWANNA-LUZERNE-PIKE-SOUTHERN WAYNE-
803 PM EST SAT FEB 10 2007

THIS HAZARDOUS WEATHER OUTLOOK IS FOR PORTIONS OF CENTRAL NEW
YORK...SOUTHEASTERN NEW YORK AND NORTHEAST PENNSYLVANIA.

.DAY ONE...TONIGHT

NO HAZARDOUS CONDITIONS ARE EXPECTED THIS PERIOD.

.DAYS TWO THROUGH SEVEN...

**THE POTENTIAL EXISTS FOR SIGNIFICANT SNOWFALL TUESDAY AND
WEDNESDAY. THE POTENTIAL EXISTS FOR SIGNIFICANT SNOWFALL FROM A
COASTAL STORM TUESDAY INTO WEDNESDAY. THERE IS STILL MUCH
UNCERTAINTY AS TO THE TRACK OF THIS STORM. THERE IS STILL A CHANCE
THAT THE HEAVIEST SNOW STAYS SOUTH AND EAST OF THE REGION. .SPOTTER
INFORMATION STATEMENT... SPOTTER ACTIVATION WILL NOT BE NEEDED.**

.SPOTTER CALL TO ACTION STATEMENT...

FORMAL SKYWARN ACTIVATION IS NOT ANTICIPATED TODAY OR TONIGHT.
HOWEVER...SNOW SPOTTERS ARE ENCOURAGED TO CALL IN THEIR REPORTS TO
THE NATIONAL WEATHER SERVICE IN BINGHAMTON.

\$\$

Winter Watches

Winter Storm Watch: *Potential (50% chance or more) for a winter storm. A winter storm watch is used to cover all of the potential hazards from snow to ice to wind and extreme cold.*

- *Potential exists for 7 inches of snow or more in 12 hours*
- *Potential exists for ½ inch or more of ice*

Blizzard Watch: *Potential exists for blizzard conditions*

Lake Effect Snow Watch: *more than 6 inches of lake effect snow possible.*



Winter Warnings

Lake Effect Snow Warning

7 inches or more of lake effect snow/12 hours

Localized accumulations, not all areas will see heavy lake effect snow.

Ice Storm Warning

1/2 inch or more of ice

Winter Storm Warning

7 inches of snow or more in 12 hours or less.

Dangerous combination of snow, ice, low wind chill, and/or blowing/drifting snow.

Blizzard Warning

Blizzard conditions expected: Wind or wind gusts exceeding 35 mph for 3 hours or more combined with blowing and/or falling snow. Visibilities near zero. Widespread whiteout conditions.

Wind Chill Warning

Wind Chills of -25F or less



Winter Advisories

Freezing Rain Advisory

Any accumulation of ice

Lake Effect Snow Advisory

*4 to 6 inches of lake effect
snow/12 hours*

Winter Weather Advisory:

4 to 6 inches of snow

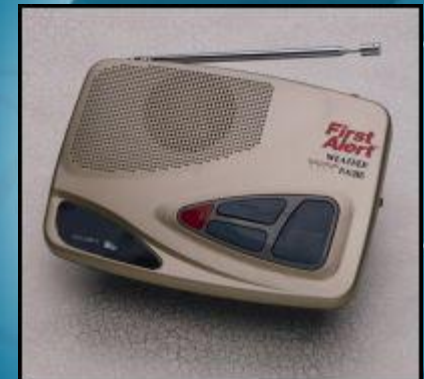
*Hazardous combination of
snow, ice, low wind chill,
and/or blowing/drifting
snow.*

Wind Chill Advisory:

Wind chills -15F to -24F



NOAA Weather Radio: The Voice of the National Weather Service





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Local forecast by
"City, St" or ZIP code

Enter location ...

Go

[Location Help](#)

We Need Your Feedback! Take Our Weather Survey

The NWS is undertaking its annual research to better serve your needs. Please take our survey at the link below. The survey will take about 20 minutes to complete and need not be finished all at once. We also encourage you to take a moment and complete one or more of the additional sections focused on Hazardous Weather, Marine Weather, and Aviation Weather. Thank you.

[Read More...](#)

[Click here for NWS Binghamton](#)

Customize Your Weather.gov

City, ST

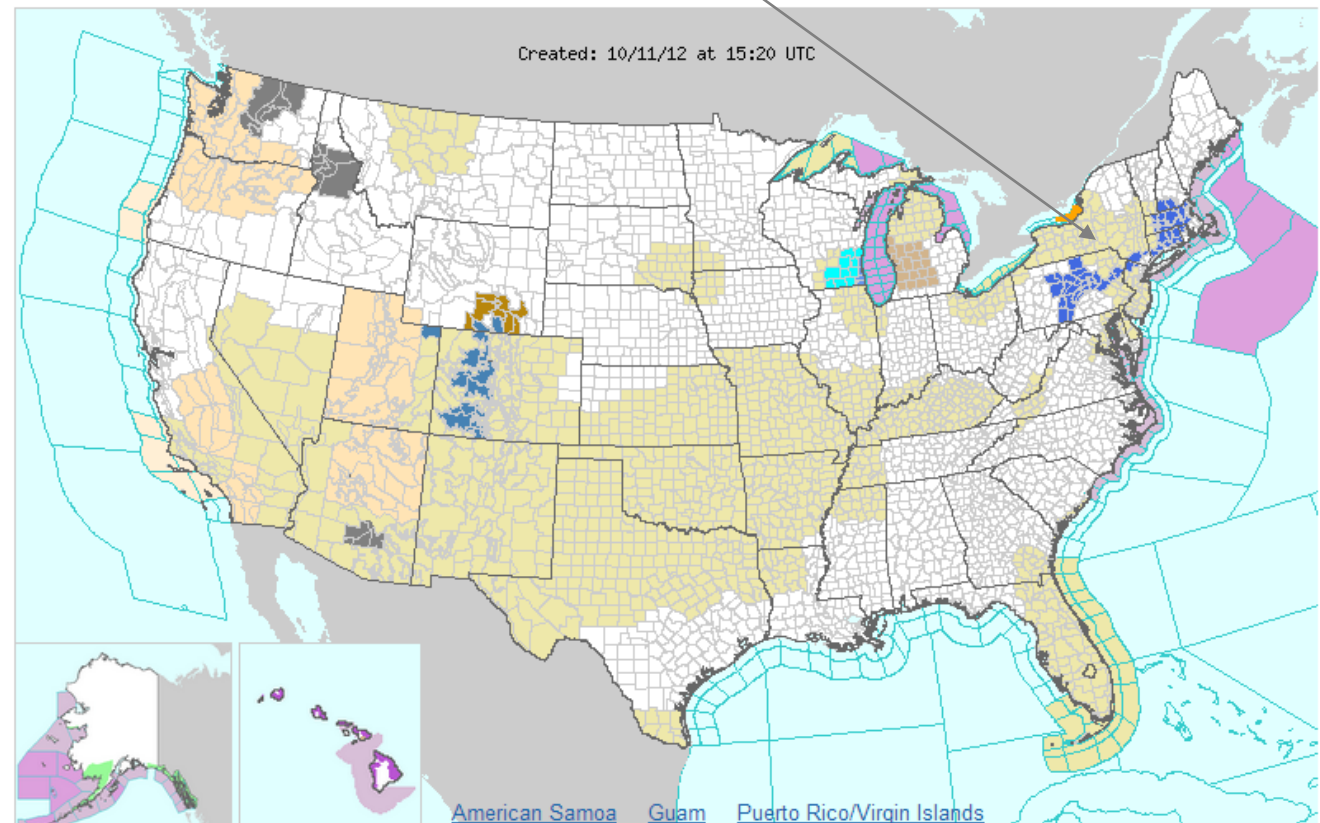
Enter Your City, ST or
ZIP Code

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Point and Click Forecasts



National Weather Service Forecast Office
Binghamton, NY

Home News Organization Search for: ☐ NWS ☐ All NOAA

Local forecast by "City, St" or Zip Code
 City, St

Current Hazards
Local Outlook
National Outlooks
Hurricanes
EM Page
eSpotter
Storm Reports

Current Conditions
Snow/Rain Reports
Rivers & Lakes
AHPS
Observations
Satellite
Text

Radar Imagery
Local
National

Forecasts
Activity Planner
Air Quality
Aviation
Fire
Hydrology
Marine
Models
Space Weather
RSS/XML/Mobile
Text

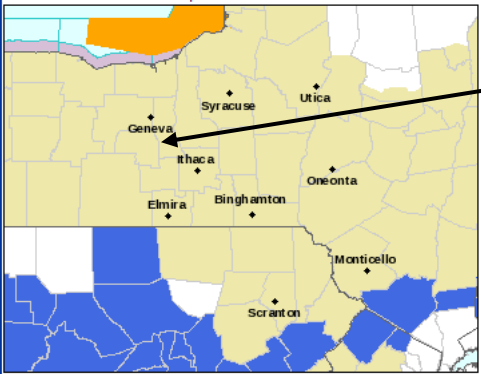
Climate
Local
National
More...

Top News - Past News **Rain/Snow Reports or Storm Reports**

- Follow us on Twitter [«Read More»](#)
- Rainfall Amounts? [AHPS Precipitation Analysis](#)
- Weather Events [«Read More»](#)
- Latest SKYWARN training information: [«Read More»](#)

Click to view the Hazardous Weather Outlook **Central NY and Northeast PA**

Click on the map below for the latest forecast.



Read watches, warnings & advisories **Zoom Out**

- Special Marine Warning
- Small Craft Advisory
- Freeze Watch
- Hazardous Weather Outlook
- Short Term Forecast

Last map update: Thu, Oct. 11, 2012 at 11:25:06 am EDT

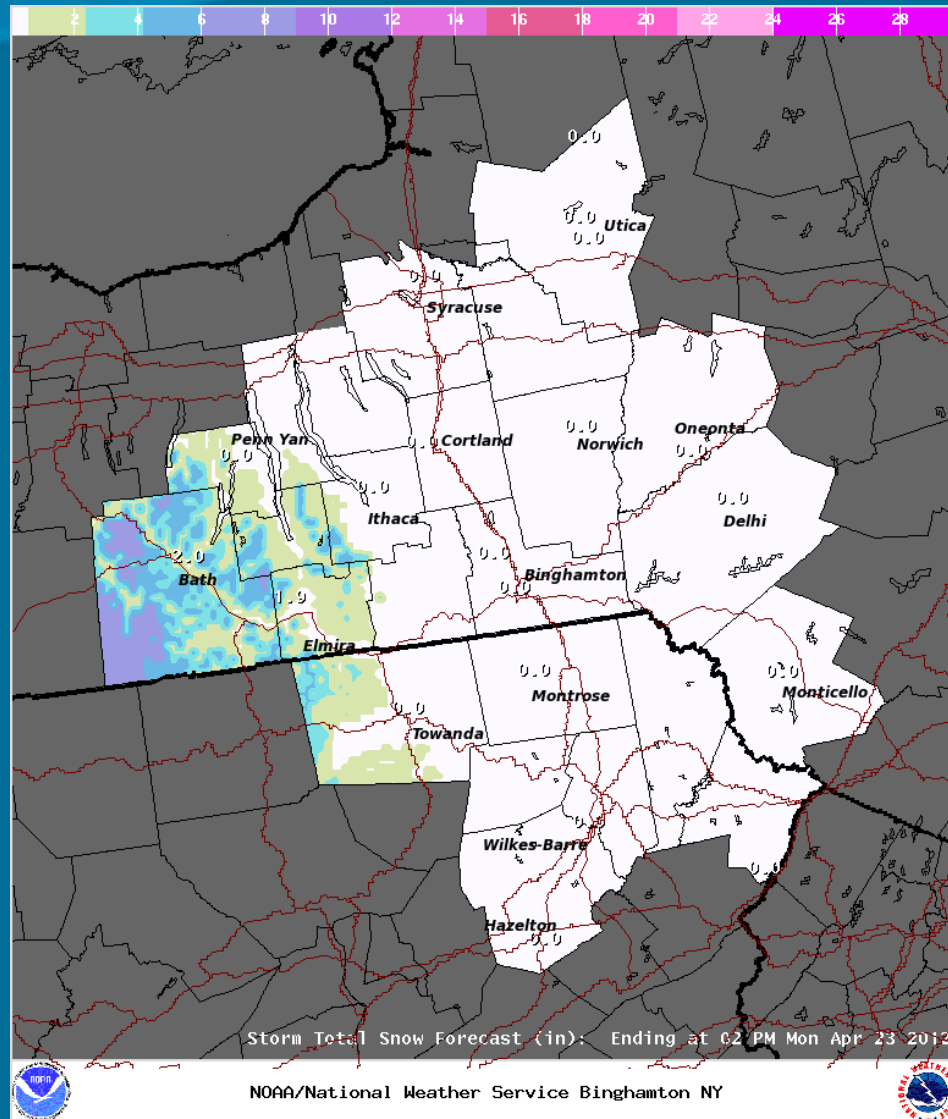
[Interactive Forecasts](#) [Report Severe Weather](#)

Weather Discussion: Lake effect showers will continue across oneida county, before lifting north out of the area midday. Another cold front will sweep through the region early on Friday, allowing cold Canadian high pressure to build in Friday night. A widespread freeze is expected Saturday morning.
[See Full Discussion](#)

Text Forecasts **Hourly Weather Graph** **Quick Forecast** **Graphical Forecast Images**

Click Map for forecasts and watches, warnings, statements and advisories.

Snowfall Forecasts on Website

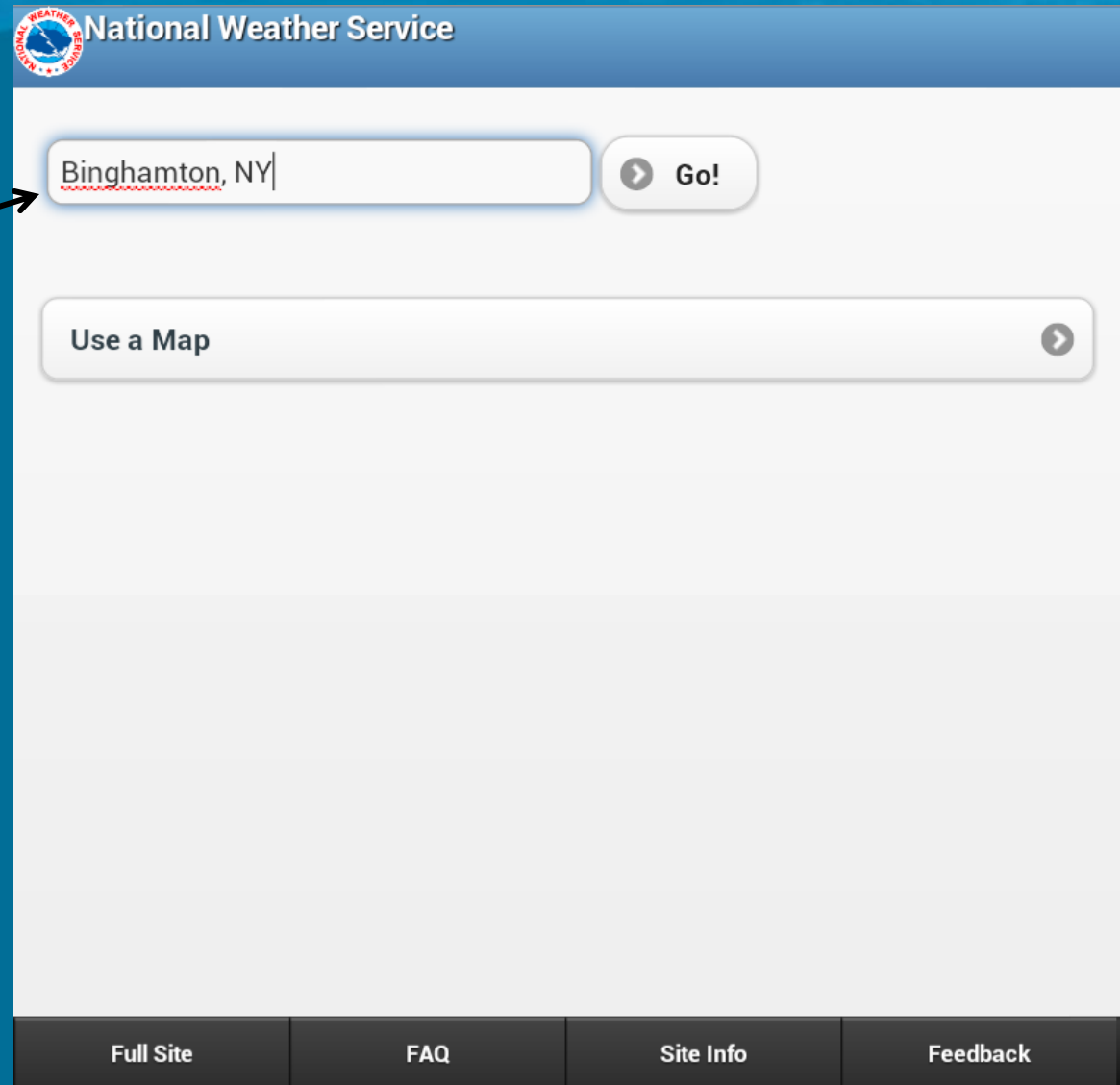


Mobile Weather Forecasts

Enter in your Zip,
City or Place.

Use your smart phone or
tablet to get the latest
forecasts, weather
conditions, radar, satellite
and other weather related
information at,

<http://mobile.weather.gov>



The screenshot shows the National Weather Service mobile app interface. At the top is the National Weather Service logo and the text "National Weather Service". Below this is a search bar containing the text "Binghamton, NY" with a red squiggly line under "Binghamton". To the right of the search bar is a "Go!" button with a right arrow icon. Below the search bar is a "Use a Map" button with a right arrow icon. At the bottom of the screen is a dark grey navigation bar with four buttons: "Full Site", "FAQ", "Site Info", and "Feedback".

Mobile Weather

- **Current Conditions at an observing site closest to the place entered.**
- **Quick Forecast**
- **Click to get full forecast.**
- **Click to see latest radar.**
- **Latest satellite.**
- **Forecast Discussions.**
- **Forecast Graphics**
- **Rivers/Lakes observations and forecasts.**
- **Tropical Weather**
- **Marine/Tides**
- **Astronomical Data**
- **Tsunami**
- **Tweet a weather report.**

The screenshot shows the National Weather Service mobile interface for Binghamton NY. The top header includes the NWS logo and the text "National Weather Service". Below this is a search bar containing "Binghamton NY". The main content area is divided into several sections: "Current Conditions" for Binghamton Regional Airport, showing a "Partly Cloudy" icon, a temperature of 58°F, and a wind speed of 13 MPH; "Quick Forecast" for the current time (12:55 pm EDT Oct 18), showing "Partly Sunny" for the afternoon, "Showers" for tonight, and "Showers" for Friday; and "Full Forecast" which is currently collapsed. A sidebar on the right contains links to "Radar", "Satellite", "Forecast Discussion", "Forecast Graphics", and "Rivers/Lakes". At the bottom, there is a "More Info" section with links to "Tropical Weather", "Marine/Tides", "Astronomical Data", and "Tsunami", followed by a "Tweet a #wxreport" button. The footer contains links to "Full Site", "FAQ", "Site Info", and "Feedback".

National Weather Service

Binghamton NY

Current Conditions

Binghamton Regional Airport
Lat: 42.23 N Lon: -75.98 W Elev: 1600 ft
Last Updated: Oct 18 2012 13:53:00

Partly Cloudy
58°F

Wind Speed
S 13 MPH

Quick Forecast
12:55 pm EDT Oct 18
Periods 1-3 of 13

This Afternoon
Partly Sunny
Hi 65°F

Tonight
100% Showers
Lo 50°F

Friday
80% Showers
Hi 65°F

Full Forecast

Radar

Satellite

Forecast Discussion

Forecast Graphics

Rivers/Lakes

More Info

Tropical Weather

Marine/Tides

Astronomical Data

Tsunami

Tweet a #wxreport

Full Site FAQ Site Info Feedback

<http://mobile.weather.gov>

We are on Facebook

facebook

US National Weather Service ... Timeline Now

October 7th, 2012 Contest Winner
Jennifer Joines Montrose, PA

US National Weather Service Binghamton NY
5,646 likes · 1,746 talking about this · 56 were here

Government Organization
This page is an experimental service provided by NWS to explore the use of Facebook to extend the reach of NWS information. Facebook posts do not always reflect the most

About Photos Likes Map Events

Highlights

Status Photo / Video Offer, Event +

What's on your mind?

US National Weather Service Binghamton NY
18 hours ago

Please help us select our picture of the day for October 17, 2012 (3 photos)
Click "like" on your favorite picture. The one with the most "likes" will be the winner. We are always looking for pictures for more contests. If you would like to enter a future contest, please post a picture to our wall and tell us you want to enter the photo contest.

Recent Posts by Others

Nancy K. Free
I had breakfast with my eagle friends at the local park in F...
1 · 17 minutes ago

Wendy Bandurski-Miller
ok the wind here on the hill in Sempronius is CRAZY! Nothing ...
3 hours ago

Ken Smith
little bit different but definitely screams autumn....feel fr...
1 · 16 hours ago

Steve-Laura Duda
"Peeking Past the Butternut Tree." Taken on the morning ...
1 · 18 hours ago

Linda Hayward Menyhart
View from back deck yesterday evening, Hamden, NY. co...
20 hours ago

More Posts

Recommendations

US National Weather Service ... Timeline 2012

Now showing the July 15, 2012 tornado around 3:50 PM EDT. The tornado was rated EF0 with wind speeds of 80 mph.

Low or rear flank draft strongest here
Inflow strongest here

Tornado development possible here, especially as supercell storm drops into the valleys to the east in southern Wyoming County.

Like · Comment · Share
1,827 people saw this post

US National Weather Service Binghamton NY
July 16

July 15, 2012 Tornado Troy, PA (6 photos)
Damage photos taken on July 16, 2012 of the damage produced by an EF0 (80 mph) tornado that moved through the Troy, PA area. — in Troy, PA.

Rating EF0
Max winds = 80 mph

Tornado Path

1,006 people saw this post

flash/expand_inline.php?context=timeline&max_height=403&max_width=403&playertype=permalink&target_div=u72rdg5185&v=400030653392918

<http://www.facebook.com/US.NationalWeatherService.Binghamton.gov>

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NWS
National Weather Service

The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy.

www.weather.gov



Search 

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NWSBinghamton

@NWSBinghamton

This is an experimental service to explore Twitter use to extend the reach of NWS information. Visit <http://goo.gl/C9g6i> for details and to provide comments.

Johnson City, NY <http://www.erh.noaa.gov/bgm/>

**158** TWEETS
48 FOLLOWING
243 FOLLOWERS

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Tweets

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- Recent images**



Tweets

**NWSBinghamton** @NWSBinghamton 41m
@TerikWeaver @DougDowty no snow up here. Anything last night was confined to the higher terrain of the Tug Hill and the Adaks.
[View conversation](#)

**NWSBinghamton** @NWSBinghamton 42m
@DougDowty Thanks for the heads up. Just sent a RT.
[View conversation](#)

**NWSBinghamton** @NWSBinghamton 42m
From the #TugHill last night, where a coating of snow fell. #nywx #snow #Cuse #CNY #Utica. twitter.com/NWSBinghamton/...pic.twitter.com/qPAXCJvD
[View photo](#)

**NWSBinghamton** @NWSBinghamton 2h
NWS Buf reporting #waterspouts off south shore of Lake Ontario near Fair Haven. Spouts possible over east end of lake through noon. #nwx.
Expand

**NWSBinghamton** @NWSBinghamton 2h
This picture is from the #TugHill last night, where a coating of snow fell. #nywx #pawx #snow #Cuse #CNY #Utica. twitter.com/tw12VhtG

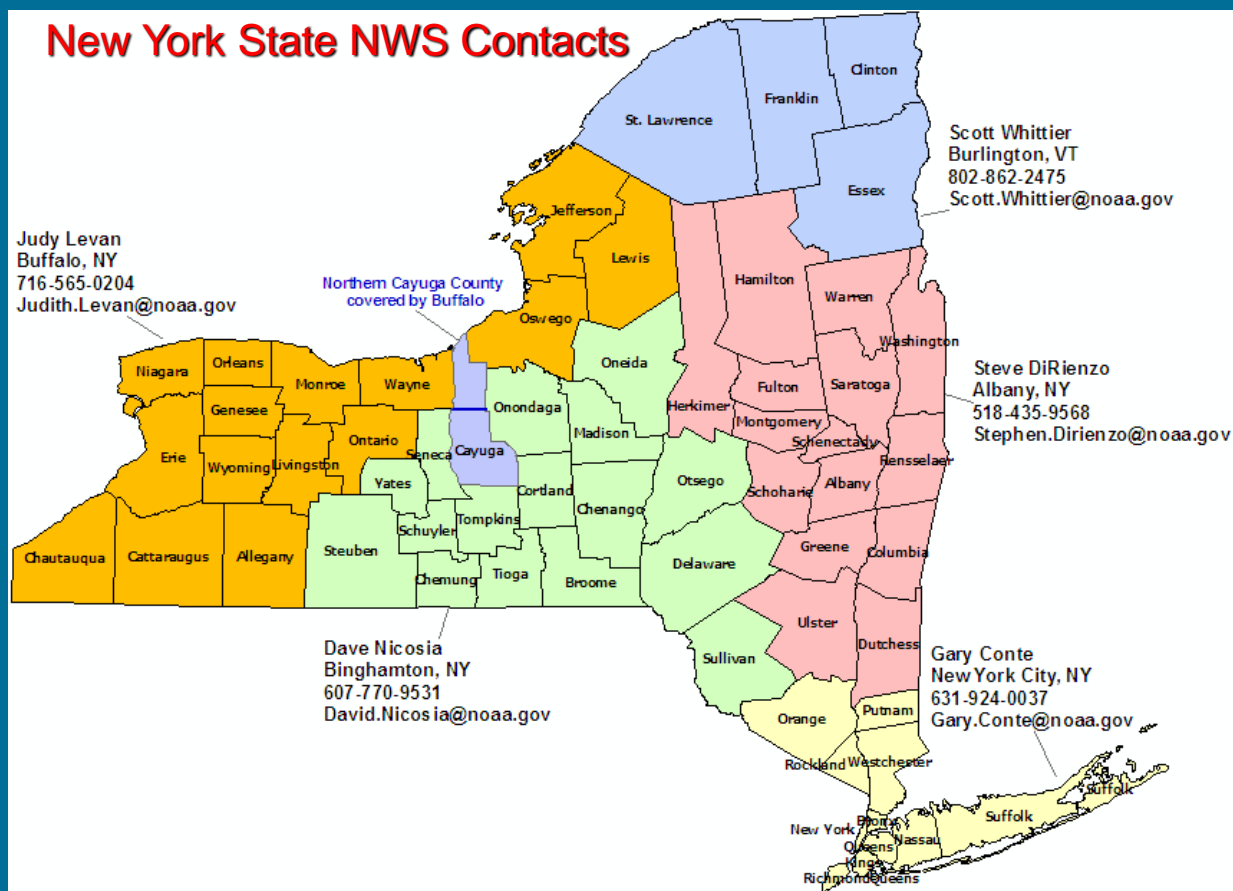
<http://twitter.com/NWSBinghamton>

NWS Binghamton Contact

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More on Winter Weather Preparedness

<http://www.nws.noaa.gov/om/winter/index.shtml>